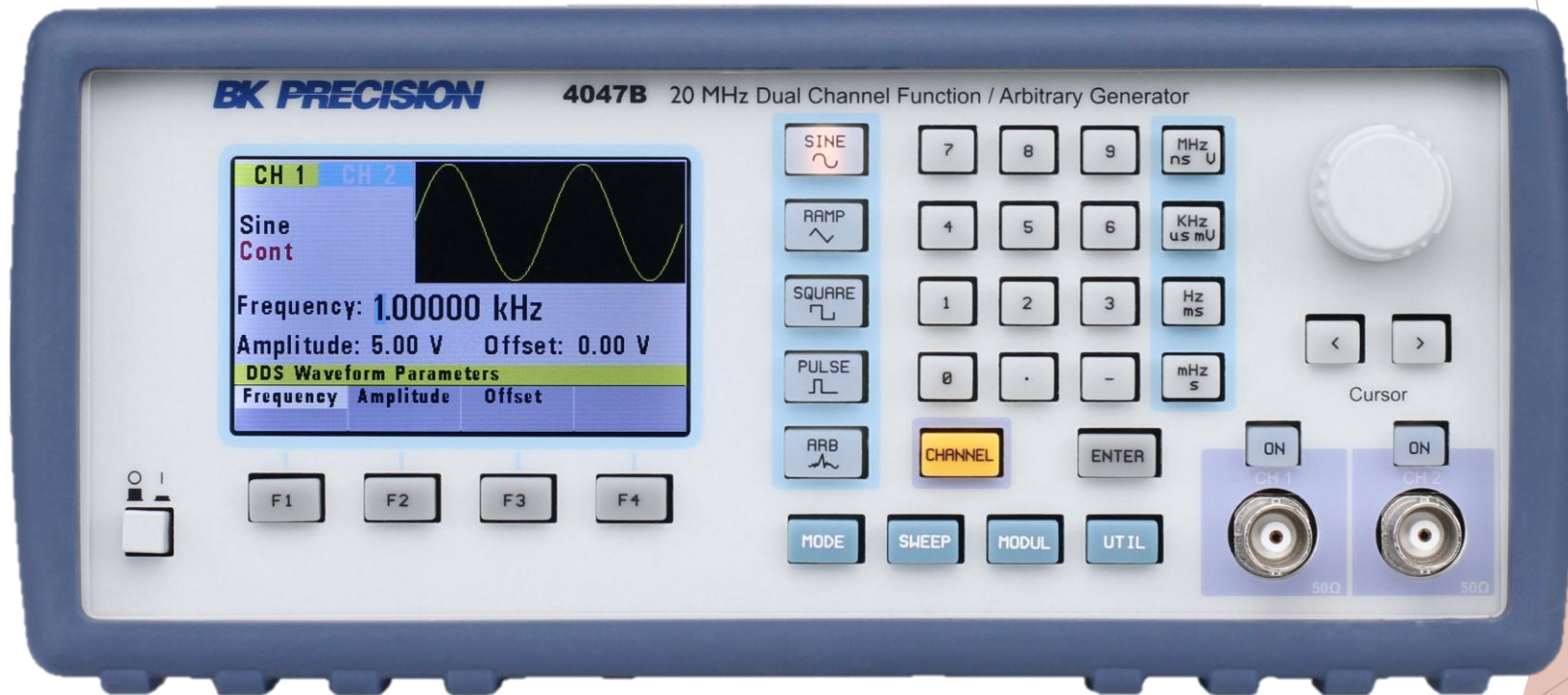


BK4047B

20 MHz Dual Channel Function/Arbitrary Waveform Generator



BK4047B

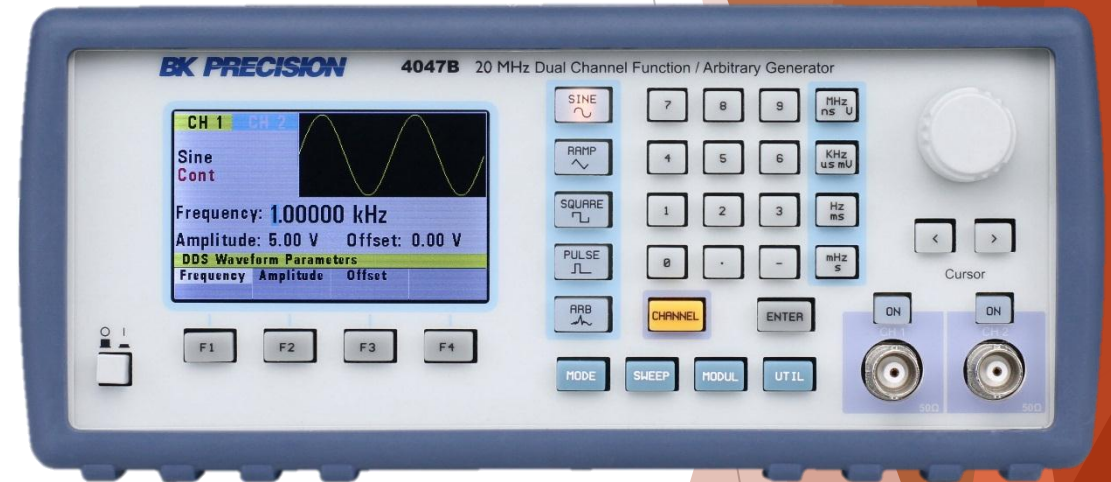
20 MHz Dual Channel Function/Arbitrary Waveform Generator

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Overview

- Dual-channel operation with each channel providing the rated amplitude (10 Vpp)
- Sine and square waveforms up to 20 MHz
- True point-by-point 14-bit, 125 MSa/s, 16-kpt arbitrary waveform generator
- Bright color display with waveform preview
- Linear and logarithmic sweep
- AM, FM, PM, FSK, and PWM internal and external modulation capabilities
- USB interface
- Internal/external triggering
- Built-in counter



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Dual architecture design

The 4047B's dual architecture, a feature typically only found in more expensive generators, provides all the benefits of a DDS and a true point-by-point arbitrary waveform generator (AWG) combined, without any limitations imposed by either technology. The DDS chip produces standard sine and triangle waveforms with high frequency resolution and at a low cost. The true point-by-point AWG implementation (Fig 2) offers improved signal integrity for arbitrary waveforms by producing significantly less jitter and distortion compared to a DDS-based architecture. Custom arbitrary waveform generation is implemented with a variable clock signal to reproduce each point stored in memory without skipping or repeating data points, a problem typically found in DDS based designs with fixed reference clocks.

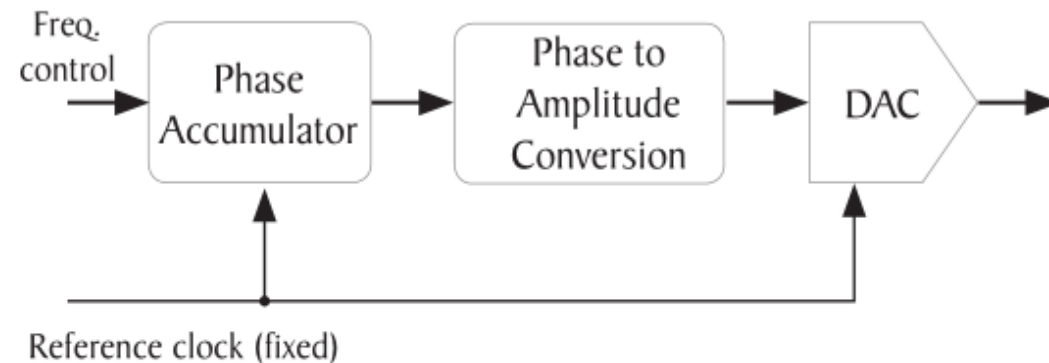


Fig 1 - DDS

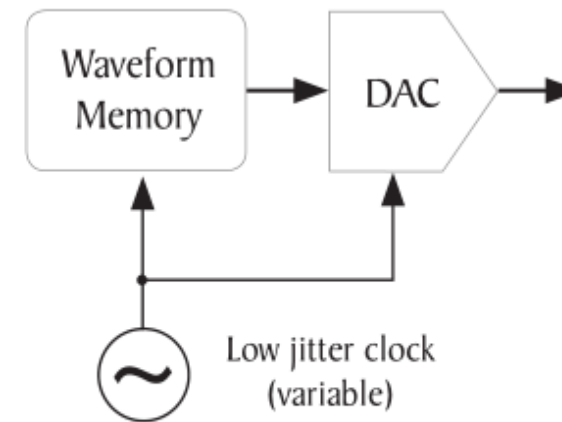
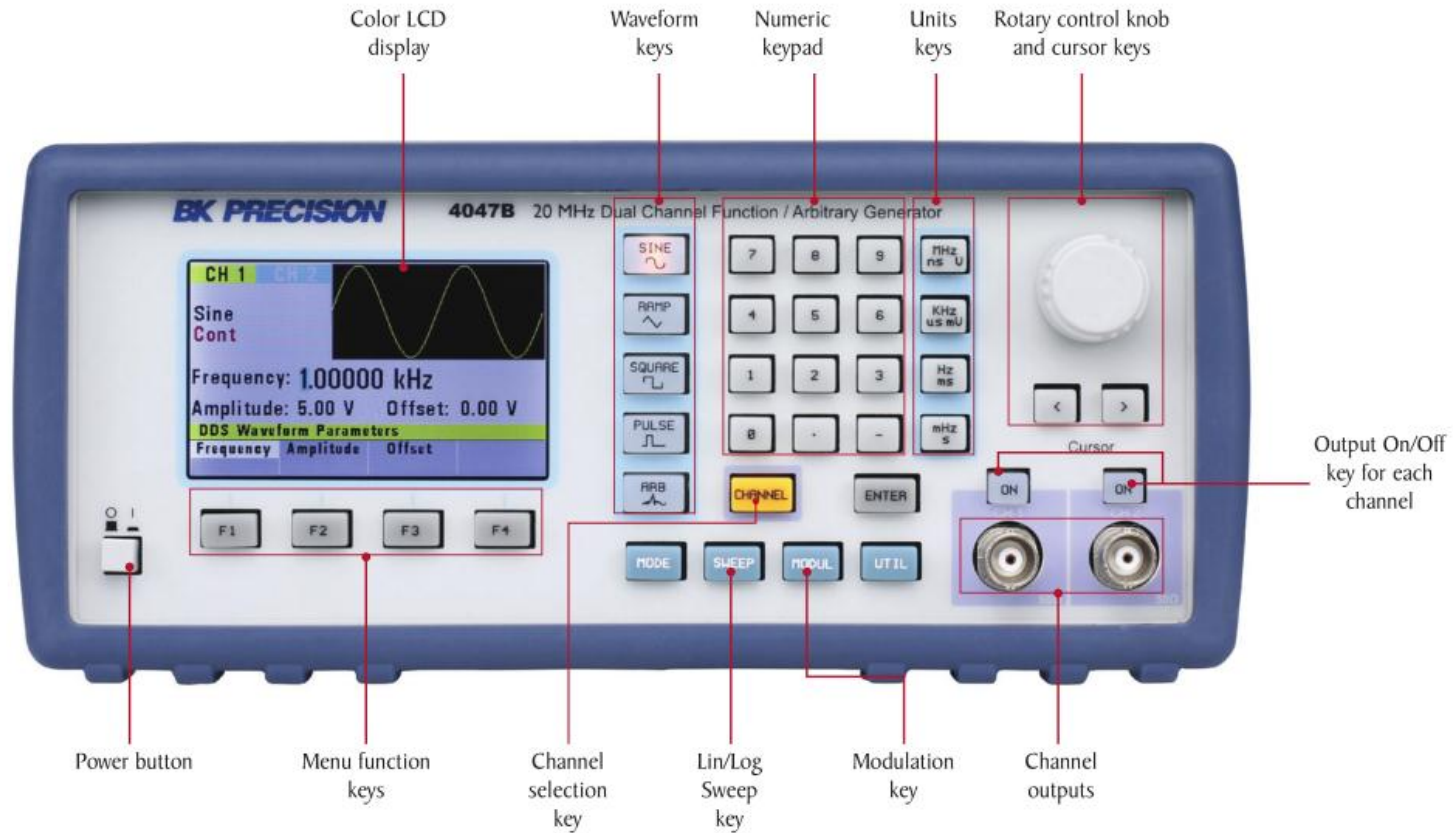


Fig 2 - point-by-point AWG

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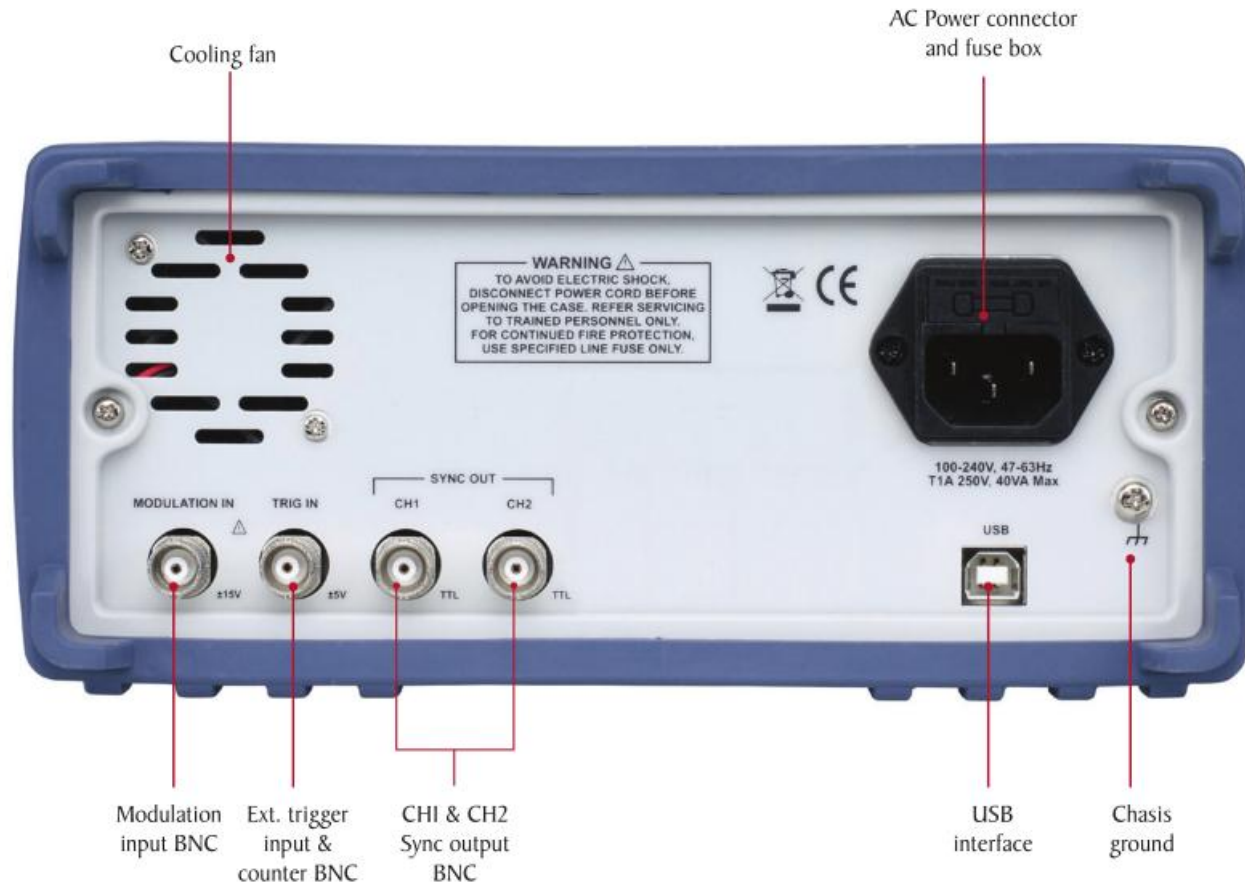
Front Panel

Intuitive user interface



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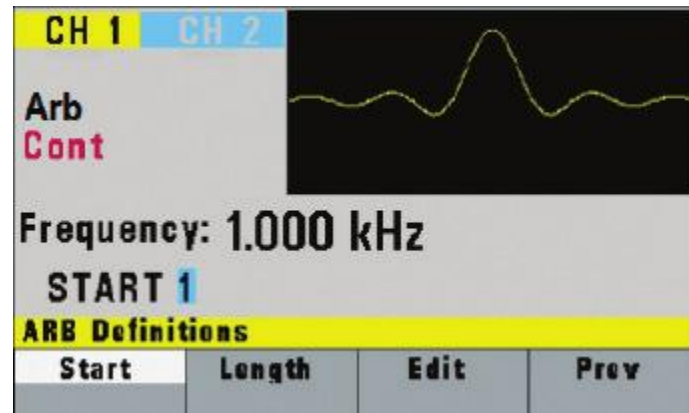
Rear Panel



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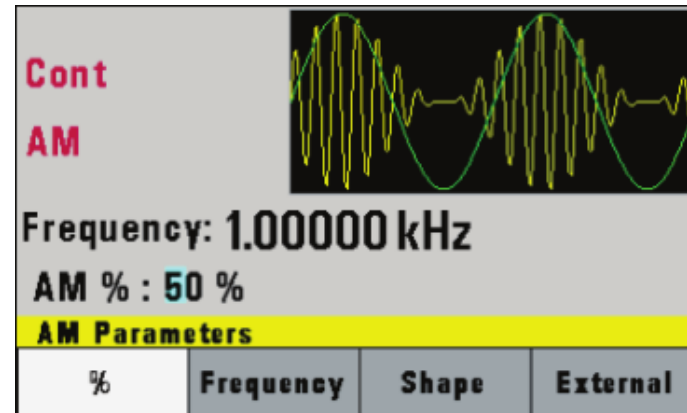
Flexible operation

Front panel arbitrary waveform generation



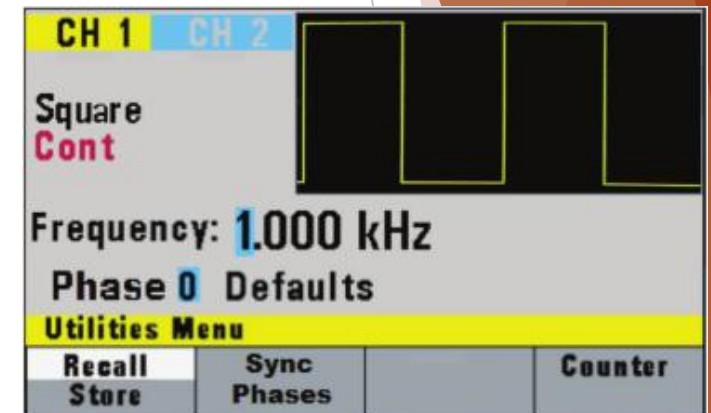
From the front panel, waveforms can be defined from scratch by entering data point-by-point or by loading and modifying predefined waveforms.

Versatile features



The 4047B provides AM, FM, PM, FSK, and PWM modulation along with linear/logarithmic sweep and built-in counter capabilities. Internal and external sources can be used for triggering and modulating the signal.

Channel phase synchronization



Easily synchronize the phase of both channels with the push of the Sync Phases button to ensure the desired output signal timing.

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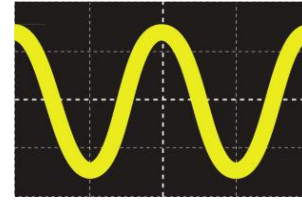
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WaveXpress

Powerful waveform editing tool



AVE X PRESS

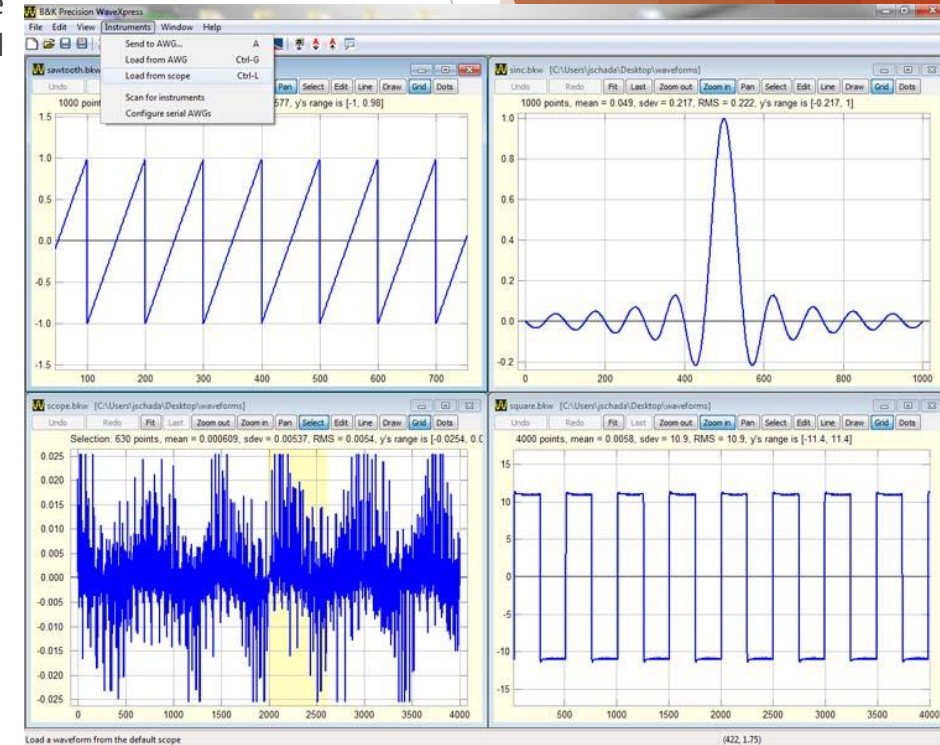
WaveXpress is a comprehensive stand-alone application allowing users to easily generate, edit, and upload custom arbitrary waveforms to the generator via the remote interface. Use the software to generate waveforms by importing a csv file or define via freehand, point draw, and waveform math functions.

Features & Benefits

- Import waveforms from B&K scopes
- Autoscan function automatically detects instruments connected via RS232, USB, or GPIB
- Insert commonly used waveforms and different types of noise
- Numerous transformations for changing a waveform.

User-defined transformations can be added in the python programming language

- Dialog settings are remembered for faster repetitive work
- Undo/redo functions allow quick experimentation



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Price Information

BK4047B 20 MHz Dual Channel Function/Arbitrary Waveform Generator → 765€

Optional Accessories:

CC-21 - BNC to Alligator Clips Test Lead

→ 13,63 €

CC510 - General Purpose Signal Interconnect Kit

→ 181,69 €

TLFG - Function Generator Test Leads Set

→ 94,25 €

Three-Year Warranty



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Competitive Comparison

Selection Guide for True Point-by-Point Function/Arbitrary Generators

	B&K Precision			Instek	Keysight Technologies	Rigol
Model	4045B	4047B	4078B	AFG-2225	33510B	DG1022Z
List Price	723 €	765 €	2 482 €	533 €	2 324 €	339 €
Max. Frequency	20 MHz	20 MHz	30 MHz	25 MHz	20 MHz	25 MHz
Waveforms	Sine, Square, Triangle, ARB	Sine, Square, Triangle, Pulse, ARB	Sine, Square, Triangle, Pulse, ARB	Sine, Square, Triangle, Pulse, ARB	Sine, square, ramp, pulse, triangle, Gaussian noise, PRBS, DC, ARB	Sine, Square, Ramp, Pulse, Noise, ARB
Number of Channels	1	2	2	2	2	2
Output Level (each channel)	10 mV to 10 Vpp (into 50Ω), 20 mV to 20 Vpp (open circuit)			1mVpp to 10 Vpp (into 50Ω) 2mVpp to 20 Vpp (open-circuit)	1 mVpp to 10 Vpp into 50 Ω 2 mVpp to 20 Vpp into open circuit	1 mVpp to 10 Vpp into 50 Ω 2 mVpp to 20 Vpp into open circuit
Modulation	AM, FM	AM, FM, FSK, PM, PWM	AM, FM, FSK,	AM/FM/PM/FSK/SUM/Sweep/Burst	AM, BPSK, FM, FSK, PM, PWM, Sum	AM, FM, PM, ASK, FSK, PSK, PWM
Arbitrary Memory	1,000 points	16,382 points	1,048,576 points	4k points	1M points	2M points
Vertical Resolution	12 bit	14 bit	14 bit	10 bits	16 bits	14 bits
Sampling Rate	50 MSa/s	125 MSa/s	200 MSa/s	120 MSa/s	160 MSa/s	200 MSa/s
Remote Interface	USB (virtual COM)	USB (virtual COM)	USBTMC	USB	LAN, USB and GPIB	USB Host, USB Device, LAN

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